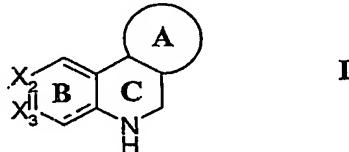


CLAIMS

What is claimed is:

1. A method of treating a subject for a bacterial infection, comprising administering to a subject in need of treatment for a bacterial infection an effective amount of a compound represented by structural formula I:



or a pharmaceutically acceptable salt, solvate, or hydrate thereof, wherein:

Ring A is a 5 or 6 membered cycloalkyl or cycloalkenyl group, optionally substituted with halogen or optionally halogenated C1-C3 alkyl or alkoxy;

X2 and X3 are each carbon, or one is nitrogen and the other is carbon; and Rings B and C are optionally and independently substituted at any substitutable ring carbon, provided that one or two substitutable ring carbons in Rings B and C are substituted with an acidic group.

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2. The method of Claim 1, wherein the subject is a human.

3. The method of Claim 2, wherein the infection is caused by a bacterium that expresses phosphoenolpyruvate:UDP-N-acetyl-D-glucosamine 1-carboxyvinyltransferase.

20

4. The method of Claim 2, wherein the infection is caused by a bacterium of a genus selected *Allochromatium*, *Acinetobacter*, *Bacillus*, *Campylobacter*, *Chlamydia*, *Chlamydophila*, *Clostridium*, *Citrobacter*, *Escherichia*, *Enterobacter*, *Enterococcus*, *Francisella*, *Haemophilus*, *Helicobacter*, *Klebsiella*, *Listeria*, *Moraxella*, *Mycobacterium*, *Neisseria*, *Proteus*, *Pseudomonas*, *Salmonella*, *Serratia*, *Shigella*, *Stenotrophomonas*, *Staphylococcus*, *Streptococcus*, *Synechococcus*, *Vibrio*, and *Yersina*.

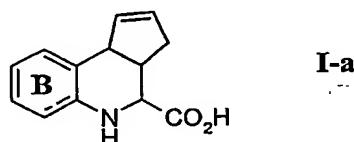
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5. The method of Claim 4 wherein the bacterial infection is from [correct list?]

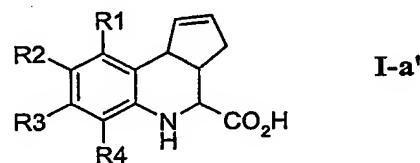
Allochromatium vinosum, Acinetobacter baumanii, Bacillus anthracis,
Campylobacter jejuni, Chlamydia trachomatis, Chlamydia pneumoniae,
Clostridium spp., Citrobacter spp., Escherichia coli, Enterobacter spp.,
Enterococcus faecalis, Enterococcus faecium, Francisella tularensis,
Haemophilus influenzae, Helicobacter pylori, Klebsiella spp., Listeria
monocytogenes, Moraxella catarrhalis, Mycobacterium tuberculosis, Neisseria
meningitidis, Neisseria gonorrhoeae, Proteus mirabilis, Proteus vulgaris,
Pseudomonas aeruginosa, Salmonella spp., Serratia spp., Shigella spp.,
Stenotrophomonas maltophilia, Staphylococcus aureus, Staphylococcus
epidermidis, Streptococcus pneumoniae, Streptococcus pyogenes, Streptococcus
agalactiae, Yersina pestis, and Yersina enterocolitica.

15. The method of Claim 5 wherein the acidic group is selected from -(CO)OH,
 - (CS)OH, -(SO)OH, -SO₃H, -OSO₃H, -P(OR^a)(OH), -(PO)(OR^a)(OH),
 -O(PO)(OR^a)(OH), or -B(OR^a)(OH), wherein R^a is -H or optionally substituted
 aryl, aralkyl, heteroaryl, heteroaralkyl, or C1 to C4 alkyl.

20. The method of Claim 6, wherein the compound is represented by structural
 formula I-a:



8. The method of Claim 7, wherein the compound is represented by structural
 formula I-a':



25

wherein:

R1, R2, R3, and R4 are independently -H, halogen, -NO₂, -CN, -(CO)R^b, -(CO)OR^b, -(CO)O(CO)R^b, -(CS)OR^b, -(CS)R^b, -(SO)OR^b, -SO₃R^b, -OSO₃R^b, -P(OR^b)₂, -(PO)(OR^b)₂, -O(PO)(OR^b)₂, -B(OR^b)₂, -(CO)NR^c₂, -NR^c₂, -NR^d(CO)R^b, -NR^d(CO)OR^b, -NR^d(CO)NR^c₂, -SO₂NR^c₂, -NR^dSO₂R^b, or an optionally substituted aryl, aralkyl, heteroaryl, heteroaralkyl, C3 to C7 cycloalkyl, nonaromatic heterocycle, C1 to C4 alkyl, C1 to C4 alkoxy, C1 to C4 hydroxy alkyl, or C2 to C6 alkoxyalkyl; wherein:

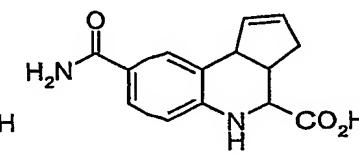
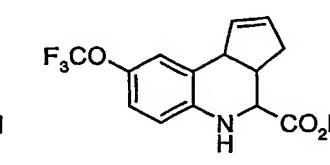
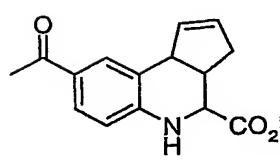
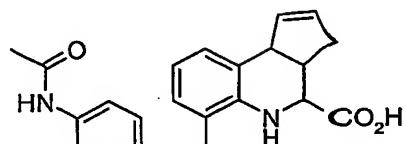
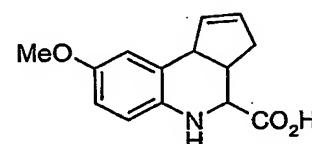
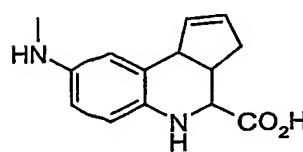
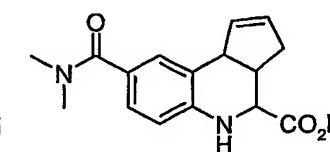
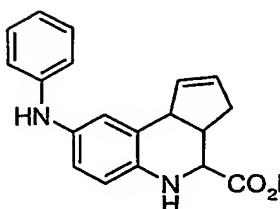
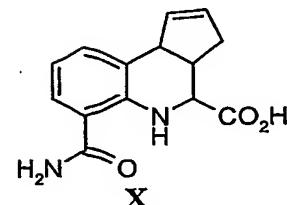
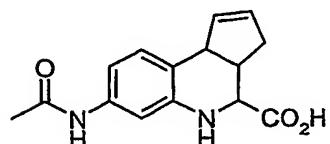
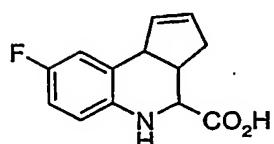
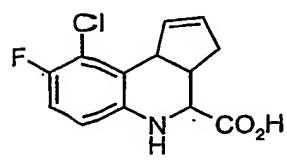
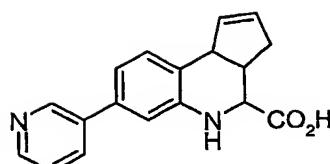
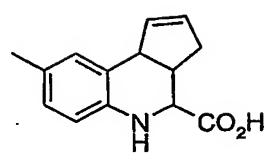
each R^b and R^d is independently -H or optionally substituted aryl, aralkyl, heteroaryl, heteroaralkyl, or C1 to C4 alkyl; and each R^c is independently -H or optionally substituted C1 to C4 alkyl, aryl, or aralkyl, or NR^c₂ is an optionally substituted nonaromatic heterocycle.

15 9. The method of Claim 8 wherein at least two of R1 to R4 are -H.

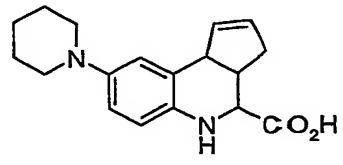
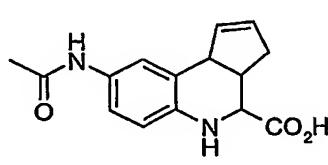
10. The method of Claim 9 wherein:

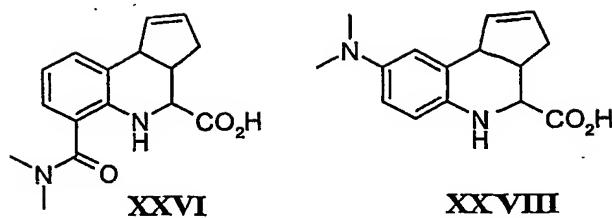
one or two of R1 to R4 are each independently -F, -Cl, -Br, -(CO)R^b, -(CO)OR^b, -(CO)NR^c₂, -NR^c₂, -NR^d(CO)R^b, -NR^d(CO)OR^b, -NR^d(CO)NR^c₂, -NR^d(CO)PhNR^d(CO)R^b, or optionally substituted phenyl, benzyl, pyridyl, methylpyridyl, or optionally halogenated C1 to C4 alkyl or C1 to C4 alkoxy; wherein each R^b, R^c, and R^d is independently -H, or optionally substituted C1 to C4 alkyl or phenyl, or each NR^c₂ is an optionally substituted morpholinyl, piperidyl, or piperazyl.

11. The method of Claim 10 wherein the compound is represented by one of the following structural formulas:



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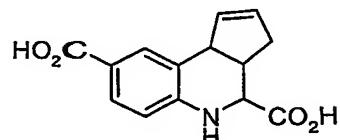




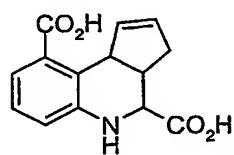
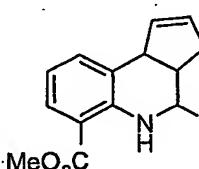
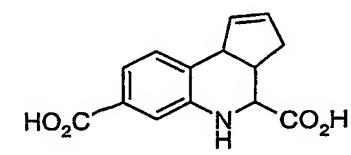
12. The method of Claim 8 wherein at least one of R1 to R4 is $-\text{CO}_2\text{H}$, or a C1 to C4 alkyl ester thereof.

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13. The method of Claim 12 wherein the compound is represented by one of the following structural formulas:

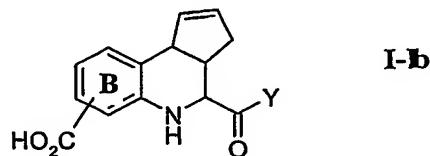
**II****IV**

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**VII****XX****XXI**

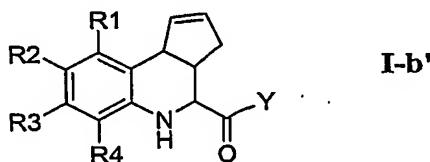
14. The method of Claim 6, wherein the compound is represented by structural formula I-b:

15



wherein Y is optionally substituted C1 to C4 alkyl, C1 to C4 alkoxy, phenyl, pyridyl, or $-NR^j_2$, wherein each R^j is independently $-H$, C1 to C4 alkyl, aryl, or aralkyl, or NR^j_2 is a nonaromatic heterocycle.

5 15. The method of Claim 14, wherein the compound is represented by structural formula I-b':



wherein:

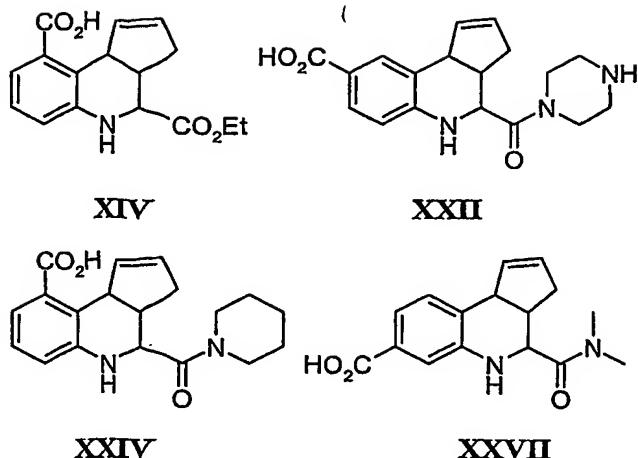
10 R1, R2, R3, and R4 are independently $-H$, halogen, $-NO_2$, $-CN$, $-(CO)R^b$, $-(CO)OR^b$, $-(CO)O(CO)R^b$, $-(CS)OR^b$, $-(CS)R^b$, $-(SO)OR^b$, $-SO_3R^b$, $-OSO_3R^b$, $-P(OR^b)_2$, $-(PO)(OR^b)_2$, $-O(PO)(OR^b)_2$, $-B(OR^b)_2$, $-(CO)NR^c_2$, $-NR^c_2$, $-NR^d(CO)R^b$, $-NR^d(CO)OR^b$, $-NR^d(CO)NR^c_2$, $-SO_2NR^c_2$, $-NR^dSO_2R^b$, or an optionally substituted aryl, aralkyl, heteroaryl, heteroaralkyl, C3 to C7 cycloalkyl, nonaromatic heterocycle, C1 to C4 alkyl, C1 to C4 alkoxy, C1 to C4 hydroxy alkyl, or C2 to C6 alkoxyalkyl, wherein at least one of R1 to R4 is $-CO_2H$;

15 wherein:

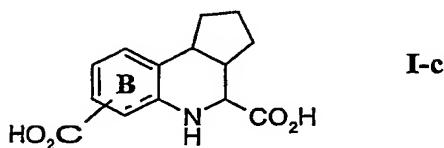
20 each R^b and R^d is independently $-H$ or optionally substituted aryl, aralkyl, heteroaryl, heteroaralkyl, or C1 to C4 alkyl; and each R^c is independently $-H$ or optionally substituted C1 to C4 alkyl, aryl, or aralkyl, or NR^c_2 is an optionally substituted nonaromatic heterocycle.

25 16. The method of Claim 15 wherein at least two of R1 to R4 are $-H$.

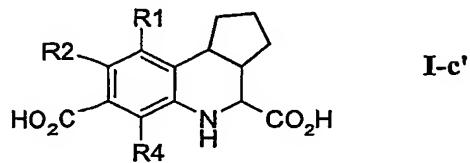
17. The method of Claim 16, wherein the compound is represented by one of the following structural formulas:



5 18. The method of Claim 6, wherein the compound is represented by structural
formula I-c:



10 19. The method of Claim 18, wherein the compound is represented by structural
formula I-c':



wherein:

15 R1, R2, and R4 are independently -H, halogen, -NO₂, -CN, -(CO)R^b,
-(CO)OR^b, -(CO)O(CO)R^b, -(CS)OR^b, -(CS)R^b, -(SO)OR^b, -SO₃R^b,
-OSO₃R^b, -P(OR^b)₂, -(PO)(OR^b)₂, -O(PO)(OR^b)₂, -B(OR^b)₂, -(CO)NR^c₂,
-NR^c₂, -NR^d(CO)R^b, -NR^d(CO)OR^b, -NR^d(CO)NR^c₂, -SO₂NR^c₂,
-NR^dSO₂R^b, or an optionally substituted aryl, aralkyl, heteroaryl,

heteroaralkyl, C3 to C7 cycloalkyl, nonaromatic heterocycle, C1 to C4 alkyl, C1 to C4 alkoxy, C1 to C4 hydroxy alkyl, or C2 to C6 alkoxyalkyl; wherein:

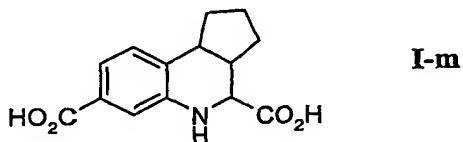
each R^b and R^d is independently $-H$ or optionally substituted aryl, aralkyl, heteroaryl, heteroaralkyl, or C1 to C4 alkyl; and each R^c is independently $-H$ or optionally substituted C1 to C4 alkyl, aryl, or aralkyl, or NR^c_2 is an optionally substituted nonaromatic heterocycle.

10 20. The method of Claim 19, wherein R1, R2, and R4 are independently $-H$, $-F$, $-Cl$, $-Br$, $-NO_2$, $-CN$, $-(CO)R^b$, $-(CO)NR^c_2$, $-NR^c_2$, $-NR^d(CO)R^b$, $-NR^d(CO)OR^b$, $-NR^d(CO)NR^c_2$, $-SO_2NR^c_2$, $-NR^dSO_2R^b$, or optionally halogenated C1 to C4 hydroxy alkyl, C1 to C4 alkyl, or C1 to C4 alkoxy; wherein

15 each R^b , R^c and R^d is independently $-H$ or C1 to C4 alkyl; or NR^c_2 is a nonaromatic heterocycle.

21. The method of Claim 20 wherein at least two of R1, R2, and R4 are $-H$.

20 22. The method of Claim 21 wherein the compound is represented by structural formula I-m:



23. A compound represented by structural formula I-a':

25



or a pharmaceutically acceptable salt, solvate, or hydrate thereof, wherein:

R1, R2, R3, and R4 are independently -H, -(CO)R^b, -(CO)OR^b, -(CO)O(CO)R^b, -(CS)OR^b, -(CS)R^b, -(SO)OR^b, -SO₃R^b, -OSO₃R^b, -P(OR^b)₂, -(PO)(OR^b)₂, -O(PO)(OR^b)₂, -B(OR^b)₂, -NR^c₂, -NR^d(CO)R^b, -NR^d(CO)OR^b, -NR^d(CO)NR^c₂, -SO₂NR^c₂, -NR^dSO₂R^b, or an optionally substituted aryl, aralkyl, heteroaryl, heteroaralkyl, C₃ to C₇ cycloalkyl, or nonaromatic heterocycle;

wherein:

each R^b and R^d is independently -H or optionally substituted aryl,

aralkyl, heteroaryl, heteroaralkyl, or C1 to C4 alkyl; and

10 each R^c is independently -H or optionally substituted C1 to C4 alkyl, aryl, or aralkyl, or NR^c₂ is an optionally substituted nonaromatic heterocycle.

24. The compound of Claim 23 wherein at least two of R1 to R4 are -H.

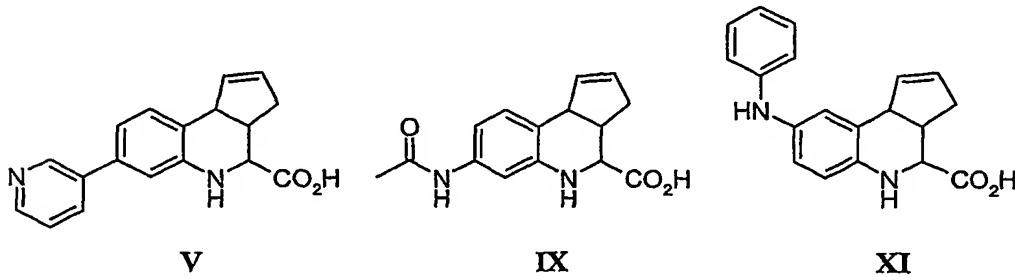
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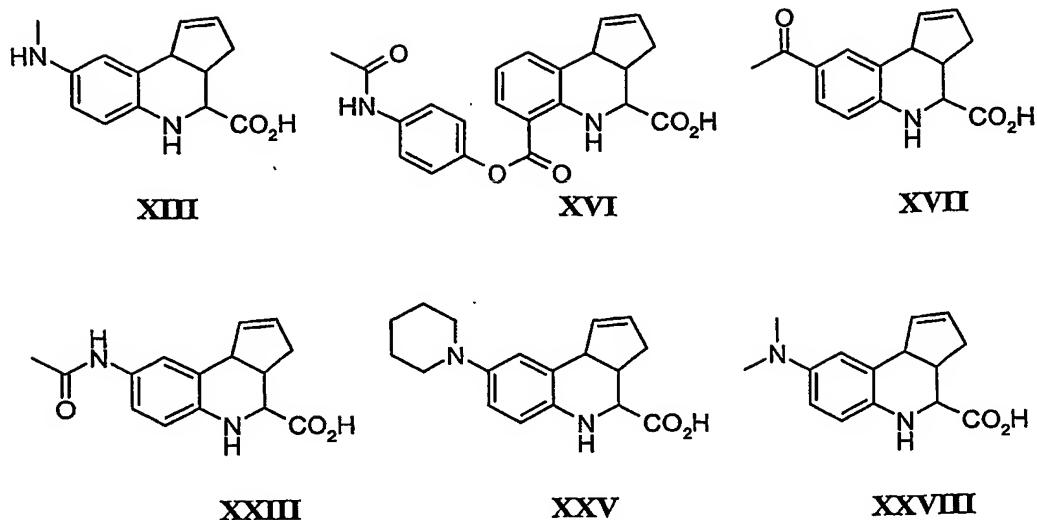
25. The compound of Claim 24 wherein:

one or two of R1 to R4 are each independently -(CO)R^b, -(CO)OR^b, -(CO)NR^c₂, -NR^c₂, -NR^d(CO)R^b, -NR^d(CO)OR^b, -NR^d(CO)NR^c₂, -NR^d(CO)PhNR^d(CO)R^b, or optionally substituted phenyl, benzyl,

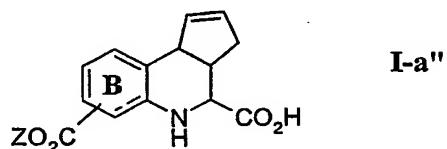
20 pyridyl, or methylpyridyl;
wherein each R^b , R^c , and R^d is independently $-H$, or optionally substituted C1 to
C4 alkyl or phenyl, or each NR^c_2 is an optionally substituted morpholinyl,
piperidyl, or piperazyl.

25 26. The compound of Claim 25 wherein the compound is represented by one of the
following structural formulas:





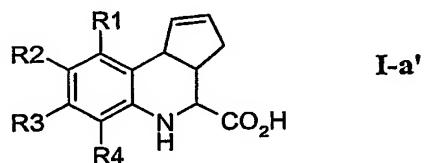
5 27. A compound represented by structural formula I-a'':



or a pharmaceutically acceptable salt, solvate, or hydrate thereof, wherein Ring B is optionally substituted at any substitutable ring carbon, and Z is -H or a C1 to C4 alkyl group.

10

28. The compound of Claim 27, wherein the compound is represented by structural formula I-a':



wherein:

15 R1, R2, R3, and R4 are independently -H, halogen, -NO₂, -CN, -(CO)R^b, -(CO)OR^b, -(CO)O(CO)R^b, -(CS)OR^b, -(CS)R^b, -(SO)OR^b, -SO₃R^b, -OSO₃R^b, -P(OR^b)₂, -(PO)(OR^b)₂, -O(PO)(OR^b)₂, -B(OR^b)₂, -(CO)NR^c₂, -NR^c₂, -NR^d(CO)R^b, -NR^d(CO)OR^b, -NR^d(CO)NR^c₂, -SO₂NR^c₂, -NR^dSO₂R^b, or an optionally substituted aryl, aralkyl, heteroaryl,

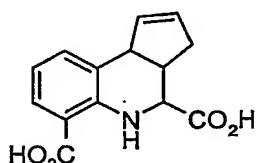
heteroaralkyl, C3 to C7 cycloalkyl, nonaromatic heterocycle, C1 to C4 alkyl, C1 to C4 alkoxy, C1 to C4 hydroxy alkyl, or C2 to C6 alkoxyalkyl, wherein at least one of R1 to R4 is -(CO)OR^b;

wherein:

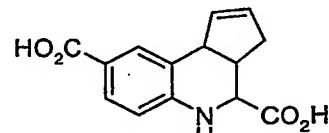
5 each R^b and R^d is independently -H or optionally substituted aryl, aralkyl, heteroaryl, heteroaralkyl, or C1 to C4 alkyl; and each R^c is independently -H or optionally substituted C1 to C4 alkyl, aryl, or aralkyl, or NR₂^c is an optionally substituted nonaromatic heterocycle.

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29. The compound of Claim 28, wherein the compound is represented by one of the following structural formulas:

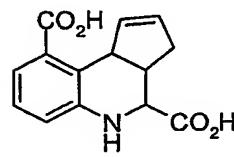


II

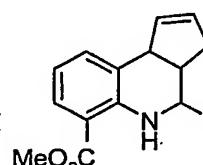


IV

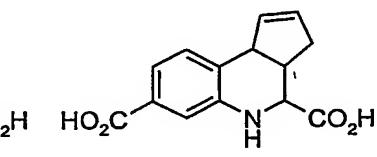
15



VII

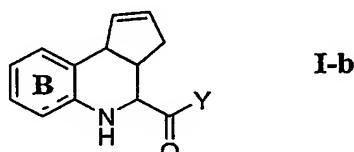


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XXI

30. A compound represented by structural formula I-b:



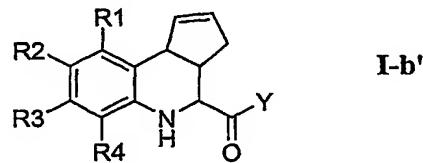
20 or a pharmaceutically acceptable salt, solvate, or hydrate thereof, wherein:

Ring B is optionally substituted at any substitutable ring carbon, provided that one or two substitutable ring carbons in Ring B are substituted with an acidic group; and

Y is optionally substituted C1 to C4 alkyl, C1 to C4 alkoxy, phenyl, pyridyl, 5 or $-\text{NR}^j_2$;
wherein each R^j is independently $-\text{H}$, C1 to C4 alkyl, aryl, or aralkyl, or NR^j_2 is a nonaromatic heterocycle.

31. The compound of Claim 30 wherein the acidic group is selected from $-(\text{CO})\text{OH}$, 10 $-(\text{CS})\text{OH}$, $-(\text{SO})\text{OH}$, $-\text{SO}_3\text{H}$, $-\text{OSO}_3\text{H}$, $-\text{P}(\text{OR}^a)(\text{OH})$, $-(\text{PO})(\text{OR}^a)(\text{OH})$, $-\text{O}(\text{PO})(\text{OR}^a)(\text{OH})$, or $-\text{B}(\text{OR}^a)(\text{OH})$, wherein R^a is $-\text{H}$ or optionally substituted aryl, aralkyl, heteroaryl, heteroaralkyl, or C1 to C4 alkyl.

32. The compound of Claim 31, wherein the compound is represented by structural 15 formula I-b':



wherein:

R1, R2, R3, and R4 are independently $-\text{H}$, halogen, $-\text{NO}_2$, $-\text{CN}$, $-(\text{CO})\text{R}^b$, 20 $-(\text{CO})\text{OR}^b$, $-(\text{CO})\text{O}(\text{CO})\text{R}^b$, $-(\text{CS})\text{OR}^b$, $-(\text{CS})\text{R}^b$, $-(\text{SO})\text{OR}^b$, $-\text{SO}_3\text{R}^b$, $-\text{OSO}_3\text{R}^b$, $-\text{P}(\text{OR}^b)_2$, $-(\text{PO})(\text{OR}^b)_2$, $-\text{O}(\text{PO})(\text{OR}^b)_2$, $-\text{B}(\text{OR}^b)_2$, $-(\text{CO})\text{NR}^c_2$, $-\text{NR}^c_2$, $-\text{NR}^d(\text{CO})\text{R}^b$, $-\text{NR}^d(\text{CO})\text{OR}^b$, $-\text{NR}^d(\text{CO})\text{NR}^c_2$, $-\text{SO}_2\text{NR}^c_2$, $-\text{NR}^d\text{SO}_2\text{R}^b$, or an optionally substituted aryl, aralkyl, heteroaryl, heteroaralkyl, C3 to C7 cycloalkyl, nonaromatic heterocycle, C1 to C4 alkyl, C1 to C4 alkoxy, C1 to C4 hydroxy alkyl, or C2 to C6 alkoxyalkyl; 25 provided that at least one of R1 to R4 is $-\text{CO}_2\text{H}$;

wherein

each R^b and R^d is independently $-\text{H}$ or optionally substituted aryl, aralkyl, heteroaryl, heteroaralkyl, or C1 to C4 alkyl; and

each R^c is independently -H or optionally substituted C1 to C4 alkyl, aryl, or aralkyl, or NR^c₂ is an optionally substituted nonaromatic heterocycle.

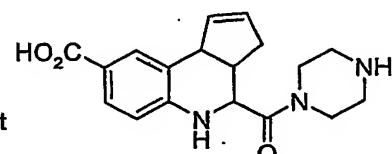
5 33. The compound of Claim 32 wherein at least two of R1 to R4 are -H.

34. The compound of Claim 33 wherein one of R1 to R4 is -CO₂H.

35. The compound of Claim 34, wherein the compound is represented by one of the
10 following structural formulas:



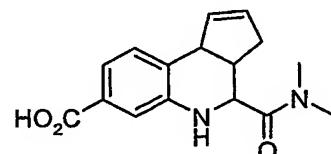
XIV



XXII

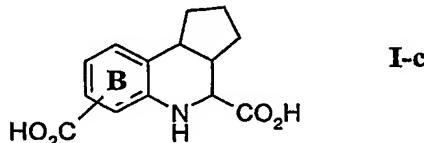


XXIV



XXVII

15 36. A compound represented by structural formula I-c:

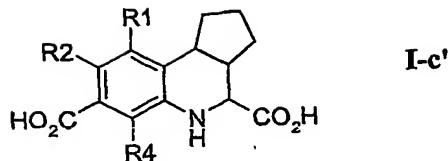


I-c

or a pharmaceutically acceptable salt, solvate, or hydrate thereof, wherein Ring B is optionally substituted at any substitutable ring carbon.

20

37. The compound of Claim 36, wherein the compound is represented by structural formula I-c':



wherein:

5 R1, R2, and R4 are independently -H, halogen, -NO₂, -CN, -(CO)R^b,
 -(CO)OR^b, -(CO)O(CO)R^b, -(CS)OR^b, -(CS)R^b, -(SO)OR^b, -SO₃R^b,
 -OSO₃R^b, -P(OR^b)₂, -(PO)(OR^b)₂, -O(PO)(OR^b)₂, -B(OR^b)₂, -(CO)NR^c₂,
 -NR^c₂, -NR^d(CO)R^b, -NR^d(CO)OR^b, -NR^d(CO)NR^c₂, -SO₂NR^c₂,
 -NR^dSO₂R^b, or an optionally substituted aryl, aralkyl, heteroaryl,
 heteroaralkyl, C3 to C7 cycloalkyl, nonaromatic heterocycle, C1 to C4
10 alkyl, C1 to C4 alkoxy, C1 to C4 hydroxy alkyl, or C2 to C6 alkoxyalkyl;

wherein:

15 each R^b and R^d is independently -H or optionally substituted aryl,
 aralkyl, heteroaryl, heteroaralkyl, or C1 to C4 alkyl; and
 each R^c is independently -H or optionally substituted C1 to C4 alkyl,
 aryl, or aralkyl, or NR^c₂ is an optionally substituted nonaromatic
 heterocycle.

38. The compound of Claim 37, wherein R1, R2, and R4 are independently -H, -F,
 -Cl, -Br, -NO₂, -CN, -(CO)R^b, -(CO)NR^c₂, -NR^c₂, -NR^d(CO)R^b, -NR^d(CO)OR^b,
20 -NR^d(CO)NR^c₂, -SO₂NR^c₂, -NR^dSO₂R^b, or optionally halogenated C1 to C4
 hydroxy alkyl, C1 to C4 alkyl, or C1 to C4 alkoxy;
 wherein each R^b, R^c and R^d is independently -H or C1 to C4 alkyl; or NR^c₂ is a
 nonaromatic heterocycle.

25 39. The compound of Claim 38 wherein two of R1, R2, and R4 are -H.

40. The compound of Claim 39 wherein the compound is represented by structural
 formula I-m:

